TABLE 1

LIST OF WATER QUALITY CONSTITUENTS TESTED FOR ROUND 1, 1983-1984 SAMPLING; AND PROPOSED CHANGES FOR ROUND 2, 1984-1985 SAMPLING

Class 1. Parameters characterizing the suitability of the ground water as a drinking water supply:

- Arsenic (1)
- Barium (1)
- Cadmium (1)
- Chromium (1)
- Fluoride (1)
- Lead (1)
- Mercury (1)
- Nitrate (as N) (1)
- Selenium (1)
- Silver (1)
- Coliform bacteria (2)
- Endrin (9)
- Lindane (9)
- Methoxychlor (9)
- Toxaphene (9)
- 2, 4-D (9)
- 2, 4, 5-TP Silvex (9)
- Radium (5)
- Gross Alpha (5)
- Gross Beta (5)

Class 2. Parameters used to characterize ground-water quality:

EPA List

- Chloride (1)
- Iron (1)
- Manganese (1)
- Phenols (Phenolics, Total Recoverable) (9)
- Sodium (1)
- Sulfate (1)

Additional Parameters, by Kennecott:

- Phosphate as P
- Silica as SiO_2
- Aluminum (1)
- Calcium (1, 3)
- Magnesium (1)
- Potassium (1)
- Alkalinity as ($CaCO_3$) (1)
- Molybdenum (1)
- Nickel (1)
- Bicarbonate (1, 4)
- Carbonate (1, 4)
- Hardness as ($CaCO_3$) (1)
- Acidity (1)
- Temperature (1, 4)

Continued

TABLE 1 (Continued)

Class 3. Parameters Used as Indicators of Ground-Water Contamination:

EPA List
- pH (1, 4)
- Specific Conductance (1, 4)
- Total Organic Carbon (TOC) (9)
- Total Organic Halogen (TOX) (6, 9)

Kennecott Additions
- Copper (1)
- Zinc (1)
- Total Dissolved Solids (1, 7)
- Total Suspended Solids (1, 8)

Proposed Frequency of Sampling (Subject to Modification as the Data are Evaluated)

Footnotes

(1) Those constituents with asterisks will very likely be sampled at least one time/year after year 1.

(2) Coliform bacteria analysis will be completed primarily at wells currently used for culinary purposes only for establishing background.

(3) Will be analyzed by AA.

(4) Will be analyzed in the field.

(5) Will be analyzed by CEP Laboratory, Santa Fe, New Mexico.

(6) Will be analyzed by UBTL.

(7) Analysis will be for dissolved concentrations. Limited numbers of duplicate samples will be analyzed for both dissolved and total concentrations for comparison.

(8) Total suspended solids shall be analyzed at those sites where total concentrations are measured.

(9) These constituents will be analyzed at key monitor sites representative and near potential contaminant source areas only for establishing background.

Continued

PROPOSED CHANGES FOR ROUND 2, 1984-1985 SAMPLING

Class (1) Parameters

1. Eliminate analysis for coliform bacteria.

2. Eliminate analysis for organics.

Class (2) Parameters

1. Eliminate analysis for phenols.

Class (3) Parameters

1. Eliminate analysis for TOC, TOX.

NOTE: Eliminating analyses for the above will in no way detract from the water quality monitoring program, the purpose of which is to determine the impacts to the water quality from Kennecott's operations.

TABLE 2.
STRATIGRAPHIC SECTIONS, GREAT BASIN AND OQUIRRH MOUNTAINS
(Permian, Pennsylvanian, Mississippian Systems)

SYSTEM OR SERIES	NORTHERN UTAH	GREAT BASIN
Oligocene, Miocene and Pliocene	Salt Lake fm.	Locally present
Eocene		Locally present
Paleocene	Wasatch fm.	
Late Cretaceous		
Early Cretaceous	Bear River fm. Gannett group	
Jurassic	Stump ss. Preuss ss. Twin Creek ls. Nugget ss.	
Triassic	Wood sh. Deadman ls. Higham grit Timothy ss. Thaynes fm. Woodside sh.	Thaynes fm.
Permian	Phosphoria or Park City fms.	Phosphoria fm. equivalent Kaibab ls. equivalent Cutler equivalent
	Wells fm.	Oquirrh or Ely fms.
Pennsylvanian		
		Manning Canyon sh.
Mississippian	Brazer fm.	Great Blue ls. Humbug fm. Deseret ls.
	Madison ls. Leatham fm.	Madison ls.
		Pilot sh.
Devonian	Three Forks fm. Jefferson dol. Water Canyon fm.	Guilmette fm. Simonson dol. Sevy dol.
Silurian	Laketown dol.	Laketown dol.
Ordovician	Fish Haven dol. Swan Peak qtz. Garden City ls.	Fish Haven dol. Swan Peak qtz. Eureka qtz. Pogonip group
Cambrian	St. Charles ls. Nounan ls. Bloomington fm. Blacksmith fm. Ute fm. Langston fm. Spence sh. member Brigham fm.	Notch Peak fm. Orr fm. Weeks fm. Marjum fm. Wheeler fm. Swasey fm. Dome ls. Howell fm. Tatow ls. Pioche fm. Prospect Mtn. qtz.
Late Precambrian	Present	Present
Early Precambrian	Present	Present

Ref: Stokes, W. L. and Heylmum, E. B.

PERMIAN SYSTEM:
- Park City formation
  - Unconformity
- Diamond Creek formation
- Kirkman formation
- Clinker formation
  - Upper chert pebble conglomerate unconformity
- Curry formation
  - Lower chert pebble conglomerate unconformity

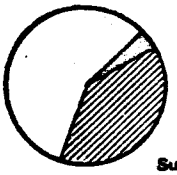
PENNSYLVANIAN SYSTEM:
- Bingham Mine formation
  - Mostest limestone member
  - Maybe limestone member
  - Petro limestone member
  - Parnell limestone member
  - Commercial limestone member
  - Lark limestone member
  - Jordan limestone member
    - angular unconformity
- Butterfield formation
  - Sub Jordan limestone member
  - St. Joe limestone member
  - Highland limestone member
  - G. C. limestone member
  - G. J. limestone member
  - Fern limestone member
  - Billiard Ball limestone member
  - Step limestone member
  - Ribbon limestone member
- White Pine formation
  - White Pine limestone members
  - Butterfield Peaks limestone members
- Maple formation
  - ? unconformity

MISSISSIPPIAN SYSTEM:
- Manning Canyon formation

Ref: James, A, Smith, W. and Bray, E. (1961)

TABLE 3

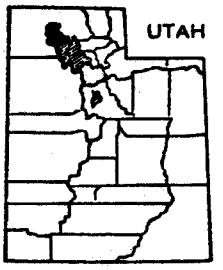
1981 WATER USE IN SALT LAKE COUNTY
BY PUBLIC WATER SUPPLIERS



COUNTY TOTALS

Surface Water	32,116,769,000
Ground Water (Springs)	2,124,578,000
Ground Water (Wells)	21,162,170,000
TOTAL	55,403,517,000

State Average GCD 240
County Average GCD 204



SALT LAKE COUNTY

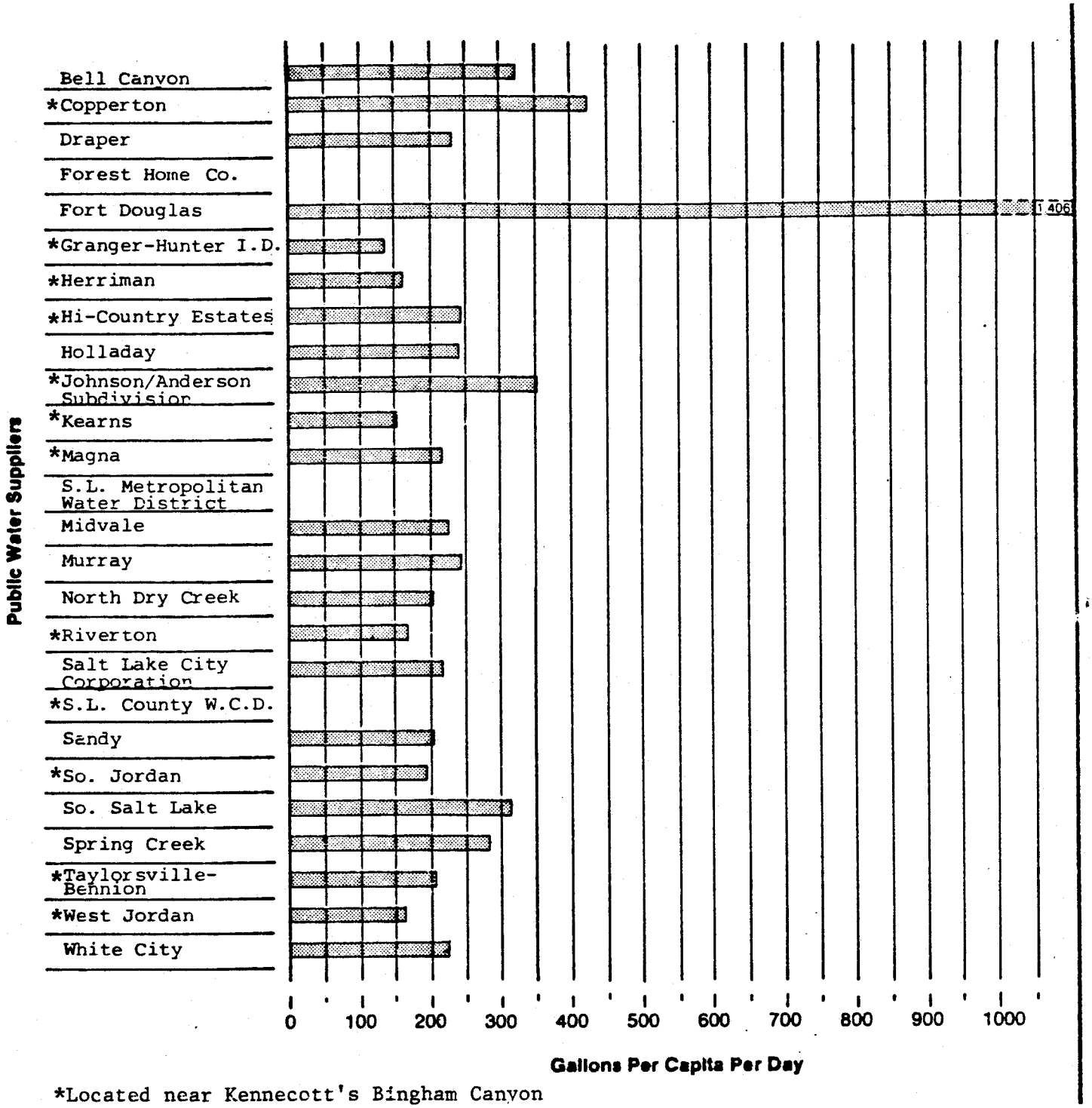
REPORTED DIVERSIONS IN THOUSANDS OF GALLONS BY PUBLIC WATER SUPPLIERS

Public Water Suppliers	Surface Water	Ground Water		Total Water Reported	Population	Reliability
		Springs	Wells			
Bell Canyon	42,453	2,928	128,396	173,777	1,470	1
• Copperton	- 0 -	- 0 -	124,541	124,541	800	2
Draper	298,554	- 0 -	41,805	340,359	4,000	1
Forest Home Co.	- 0 -	150	- 0 -	150	N/A	3
Fort Douglas	205,330	- 0 -	- 0 -	205,330	400	1
• Granger-Hunter I.D.	1,298,740	89,568	2,597,390	3,985,698	81,905	1
• Herriman	- 0 -	16,396	16,395	32,791	550	2
• Hi-Country Estates	- 0 -	- 0 -	33,600	33,600	375	2
Holladay	350,628	- 0 -	570,643	921,271	10,500	1
• Johnson/Anderson Subdivision	- 0 -	- 0 -	9,000	9,000	70	3
• Kearns	824,555	56,866	540,225	1,421,646	25,048	1
• Magna	- 0 -	- 0 -	1,188,000	1,188,000	15,000	1
*S.L. Metropolitan Water District	21,376,226	- 0 -	- 0 -	21,376,226	N/A	1
Midvale	- 0 -	- 0 -	850,000	850,000	10,150	3
Murray	223,991	426,610	1,690,614	2,341,215	26,000	1
North Dry Creek	17,000	- 0 -	- 0 -	17,000	230	2
• Riverton	13,637	24,286	438,951	476,874	7,785	1
Salt Lake City Corporation	24,452,000	1,025,280	3,643,310	29,120,590	369,751	1
• S.L. County W.C.D.	1,518,440	104,720	994,840	2,618,000	N/A	1
Sandy	942,033	64,968	3,714,902	4,721,903	63,950	1
• So. Jordan	328,743	22,672	215,384	566,799	8,051	1
So. Salt Lake	- 0 -	- 0 -	910,011	910,011	7,900	1
Spring Creek	- 0 -	184,695	- 0 -	184,695	1,785	1
• Taylorsville-Bennion	807,150	50,714	1,770,088	2,627,952	35,000	1
• West Jordan	787,438	54,306	816,977	1,658,721	28,000	1
White City	6,077	419	867,098	873,594	10,633	1
TOTALS	32,116,769	2,124,578	21,162,170	55,403,517	709,353	

*Water wholesaler, figures not included in totals.

Ref: Hooper, D. and Schwarting R. (1982)

TABLE 4
AVERAGE DAILY PER CAPITA WITHDRAWAL RATES
IN SALT LAKE COUNTY



*Located near Kennecott's Bingham Canyon Operations